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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/196,680	11/20/1998	STEPHEN J. MEYER	052250-5008	9428

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EXAMINER

KIM, CHRISTOPHER S

ART UNIT	PAPER NUMBER
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3752

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/196,680	Applicant(s) MEYER ET AL.	
	Examiner Christopher S. Kim	Art Unit 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14, 15 and 20-74 is/are pending in the application.
- 4a) Of the above claim(s) 55-61 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-11, 14, 15, 20-54 and 62-74 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 12, 2006 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 64-74 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 64 recites a means for transforming and delivering which appears to invoke means plus function under 35 U.S.C. 112, six paragraph. The means plus function defines a dual function, one of which requires elements and/or function beyond the deflector, i.e., the average density of 0.15 gallons per minute per square feet is also

dependent on the flow rate and pressure of the water provided to the sprinkler and deflector. The disclosure, as originally filed, fails to teach a structure which performs the dual function. See MPEP 2181.II.

Claims 67 and 72-73 recite "...the deflector includes a face portion...the face portion consisting of a single flow opening..." The disclosure, as originally filed, discloses the face portion having several flow openings. The flow deflector has a face portion having several radial slots/openings which permits fluid flow.

4. Claims 64-74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 64 recites a means for transforming and delivering which appears to invoke means plus function under 35 U.S.C. 112, six paragraph. The means plus function defines dual function, one of which requires elements and/or function beyond the deflector, i.e., the average density of 0.15 gallons per minute per square feet is also dependent on the flow rate and pressure of the water provided to the sprinkler and deflector. The metes and bounds of the claimed invention cannot be determined because the specification does not disclose a structure which performs the dual function. See MPEP 2181.II.

Claim Rejections - 35 USC § 103

5. Claims 1-11, 14, 15, 20-54, 62 and 64-74 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Tramm.

Fischer discloses a sprinkler comprising: a generally tubular body 30 having a central passageway 31, a closure 40, a trigger 44, a deflector 38; a face portion 76; a canopy portion 62; two frame arms 34; two support arms (no reference numbers); a single flow opening 79. Fischer teaches the use of a deflector 38 shaped and positioned to transform a horizontal flow of water into a spray pattern of droplets dispersed over a generally horizontal, rectangularly-shaped coverage area (see figures 1 and 6). The coverage area may be up to 16 ft x 24 ft (see column 3 lines 55-58). Tramm discloses, in column 5, lines 12-14, a horizontal-type fire protection sprinkler having a K-factor of at least 3.5, or at least 5.0, or at least 7.0, or at least 10.5, or at least 13.0. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the range of K-factors (greater than 9) as taught by Tramm to provide a specific flow rate depending on pressure.

The device of Fischer in view of Tramm discloses the claimed limitation with the exception of the water flow rate and coverage area being at a height of only three feet below the canopy portion of the deflector. Fischer in view of Tramm discloses the structural limitations, K-factors including the relationship between flow rates and pressures, and the coverage area. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have positioned the sprinkler of Fischer in view of Tramm three feet above the coverage area to extinguish fires in three feet high compartments.

Fischer discloses the limitations of the claimed invention with the exception of the liquid filled glass bulb. Tramm discloses, pictorially, in figure 2, a liquid filled glass bulb 20. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have replaced the trigger of Fischer with the trigger (liquid filled glass bulb) of Tramm to eliminate the need for solder.

Fischer discloses, in column 3, lines 55-58, a coverage area of 16 ft x 24 ft (using a deflector comprising a generally planar face portion and a canopy portion, see figure 2). It would have been obvious to a person of ordinary skill in the art at the time the invention was made that the coverage area is dependent on the fluid pressure, and therefore, any coverage area less than 16 ft x 24 ft can be attained by reducing the pressure (or increasing the K-factor which results in a lower pressure as defined by the formula in column 5, lines 30-38 of Tramm). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have adjusted the coverage area depending on the size of the room, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

The functional recitation "...and when the sidewall fire sprinkler is paired with an identical sidewall fire sprinkler mounted approximately sixteen feet apart on a generally planar wall surface with a collection area of approximately sixteen feet between the sprinklers and sixteen feet away from one of the sprinklers, the collection area located at either one of a distance of about thirty-six inches and a distance of approximately six feet and 7.5 inches below each of the sidewall fire sprinklers so that water is delivered

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to the collection area at an average density of about 0.15 gallons per minute per square feet" merely recites the ability to so perform. The device of Fischer in view of Tramm discloses the structural limitations of applicant's claimed invention, and therefore, it too has the capability to so perform.

6. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Tramm, Pieczykolan (H121), and Bosio et al. (5,727,737).

Fischer discloses a sprinkler comprising: a generally tubular body 30 having a central passageway 31; a frame arms 34, a closure 40, a trigger 44, a deflector 38; a face portion 76; a canopy portion 62. Fischer teaches the use of a deflector 38 shaped and positioned to transform a horizontal flow of water into a spray pattern of droplets dispersed over a generally horizontal, rectangularly-shaped coverage area (see figures 1 and 6). The coverage area may be up to 16 ft x 24 ft (see column 3 lines 55-58).

Fischer differs from what is being claimed in the trigger 44 being a liquid-filled glass bulb and the tubular body having a K factor greater than 9.

Regarding the liquid-filled glass bulb, Bosio teaches, in column 2, lines 38-33, that glass bulb containing heat-expandable liquid and fusible solder element are interchangeable. Pieczykolan teaches a spring washer and bulb design such that thinner walled and faster acting glass bulbs may be employed to ensure quicker release. See Pieczykolan column 3, lines 49-68. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the bulb design of Pieczykolan to ensure quicker release.

Regarding the tubular body having a K factor greater than 9, Tramm discloses, in column 5, lines 12-14, a horizontal-type fire protection sprinkler having a K-factor of at least 3.5, or at least 5.0, or at least 7.0, or at least 10.5, or at least 13.0. Tramm further teaches, in column 5, lines 30-45, the relationship between flow rate and K factor and flow pressure. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided the sprinkler of Fischer with the range of K-factors (greater than 9) as taught by Tramm to provide a specific flow rate depending on pressure or to increase flow rate given a specific pressure.

Response to Arguments

7. Applicant's arguments filed August 10, 2005 have been fully considered but they are not persuasive.

In response to applicant's argument that the Declaration of Michael A. Fischer states that he would not know how to modify the sprinkler of Fischer with the teachings of Tramm, Tramm teaches that the K-factor is governed by flow rate (Q) and residual pressure at the inlet to the sprinkler (p). The deflector is not a governing parameter of K-factor. As for the function recitation of coverage area, it merely requires the ability to so perform. The device of Fischer discloses the structure claimed and also has the ability to perform the function. If some other element, or exclusion Fischer's channel 90, is required to produce the function, the structured elements claimed are not commensurate in scope with the functional recitation. Therefore, some essential structure or exclusion thereof is missing/omitted from the claimed invention. Finally, Mr.

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Fischer's statement that he would not know how to modify the Fischer reference with the teachings of Tramm is a statement of opinion. Mr. Fischer's declaration presents no factual evidence.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Thursday, 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (571) 272-4919. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher S. Kim
Primary Examiner
Art Unit 3752

CK